ABSTRACT OF THE DISCLOSURE

Disclosed is a cross-connect apparatus having n-number of working cross-connects for cross-connecting, on a per-bit basis, n-bit input signals that arrive
5 from respective ones of a plurality of input paths; n-number of first logic circuits for calculating the exclusive-ORs of the n bits of each input signal and applying their outputs to a standby cross-connect; n-number of second logic circuits for calculating the
10 exclusive-ORs of signals output from the n-number of working cross-connects and from the single standby cross-connect; and third logic circuits having a function for selecting output signals of the n-number of working cross-connects and outputs of the second
15 logic circuits. The cross-connects apparatus detects the occurrence of an abnormality in a working cross-connect by monitoring the outputs of the second logic circuits, identifies the faulty cross-connect by successively turning off one input among the n-number
20 of inputs to the first and second logic circuits, and selectively outputs the output signals of the second logic circuits instead of the output signals of the faulty cross-connect by using the third logic circuits.